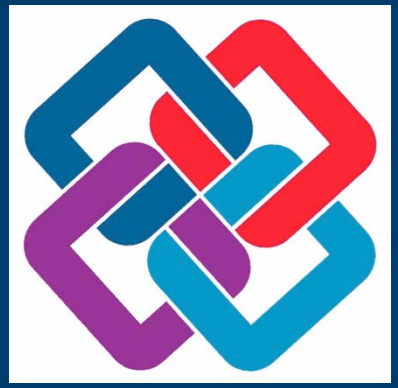

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Project #3
Classification, Identification and BIM
Connecting information, integrated BIM

ICIS DA, Auckland 2016

The Why and the What

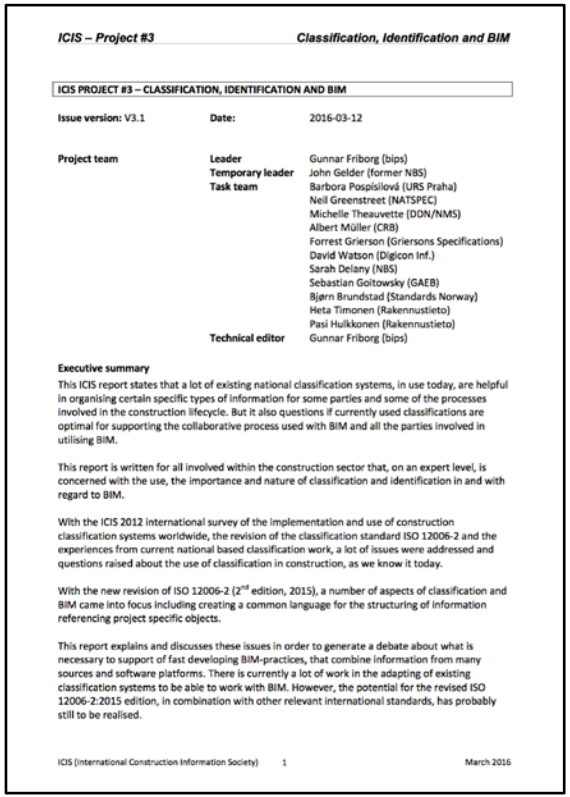
Why isn't classification and identification more widely used

- By all participants in the processes
- For connecting and integrating information within BIM

– and could it be in the future?

What is needed for having a BIM-oriented classification?

What is needed for standardising ways of doing identification?



ICIS – Project #3 *Classification, Identification and BIM*

ICIS PROJECT #3 – CLASSIFICATION, IDENTIFICATION AND BIM

Issue version: V3.1 **Date:** 2016-03-12

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Executive summary

This ICIS report states that a lot of existing national classification systems, in use today, are helpful in organising certain specific types of information for some parties and some of the processes involved in the construction lifecycle. But it also questions if currently used classifications are optimal for supporting the collaborative process used with BIM and all the parties involved in utilising BIM.

This report is written for all involved within the construction sector that, on an expert level, is concerned with the use, the importance and nature of classification and identification in and with regard to BIM.

With the ICIS 2012 international survey of the implementation and use of construction classification systems worldwide, the revision of the classification standard ISO 12006-2 and the experiences from current national based classification work, a lot of issues were addressed and questions raised about the use of classification in construction, as we know it today.

With the new revision of ISO 12006-2 (2nd edition, 2015), a number of aspects of classification and BIM came into focus including creating a common language for the structuring of information referencing project specific objects.

This report explains and discusses these issues in order to generate a debate about what is necessary to support of fast developing BIM-practices, that combine information from many sources and software platforms. There is currently a lot of work in the adapting of existing classification systems to be able to work with BIM. However, the potential for the revised ISO 12006-2:2015 edition, in combination with other relevant international standards, has probably still to be realised.

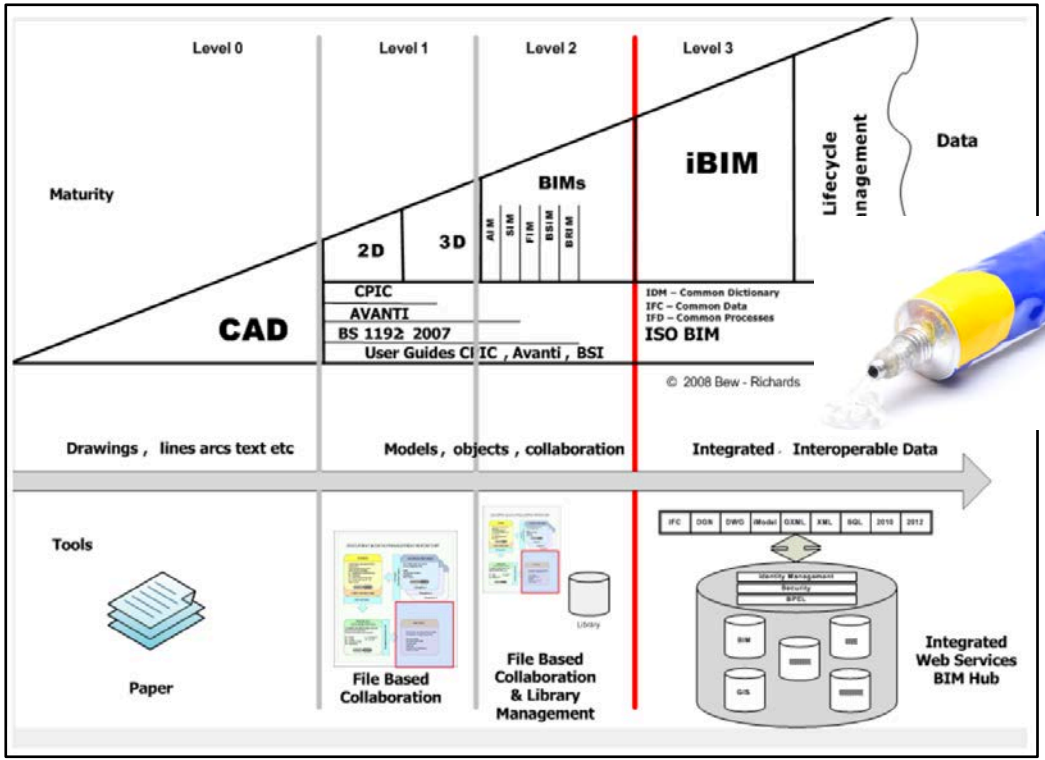
ICIS (International Construction Information Society) 1 March 2016

The glue for BIM

It is said that to be able to do Level 3 BIM or integrated BIM we need

- Common structuring and language, the semantics
- Using of widely accepted standards
- Making data interoperable

The report reflects and discusses these issues related to classification and identification.



Recommandations for reading

Important learning from Appendix A, *The 2012 International classification survey* and *end-user comments during the project timeline* about important issues, for example:

- We need simplified classification for construction entity parts
- There is a need for stable and lifecycle oriented classification
- Additional aspects that need to be addressed are to support relations between objects
- The need for part-of relationships to enable BIM-support is critical
- Composition is a process for designers, just as decomposition is a process for contractors
- Focus on properties – eventually by standardising and classifying them

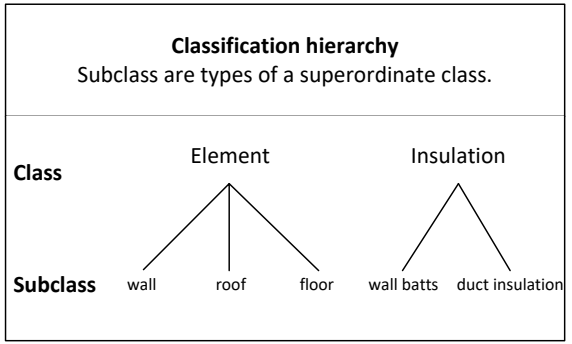
Reflecting the revision of ISO 12006-2

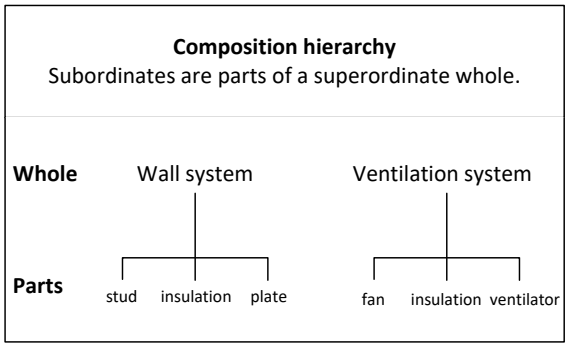
Focus on BIM, object-orientation and modelling (closer to ISO 12006-3)

Better and more standardised ways of defining terms and classes by pointing at other standards

Taking user needs and lifecycle perspectives into consideration

Dealing with both type- and part-of-relations including systems thinking

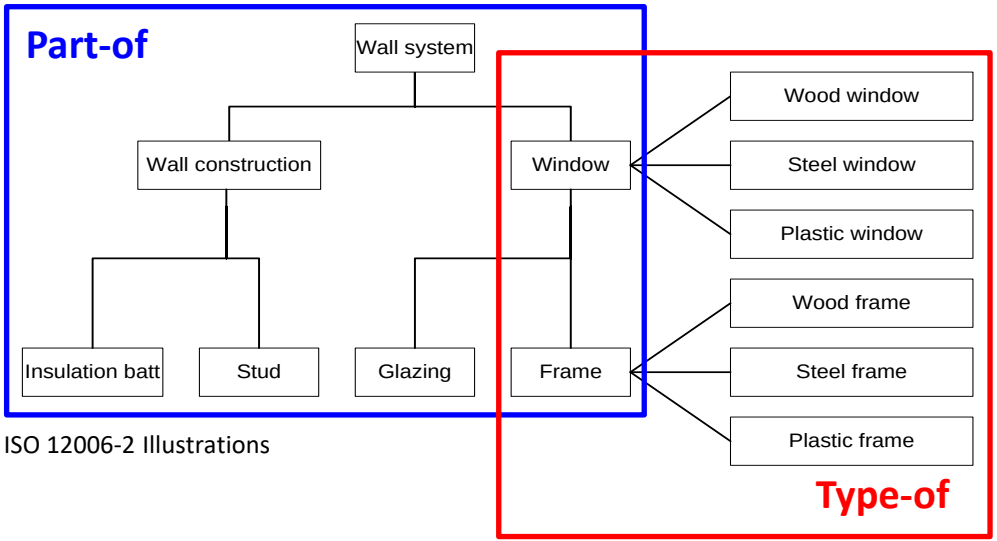




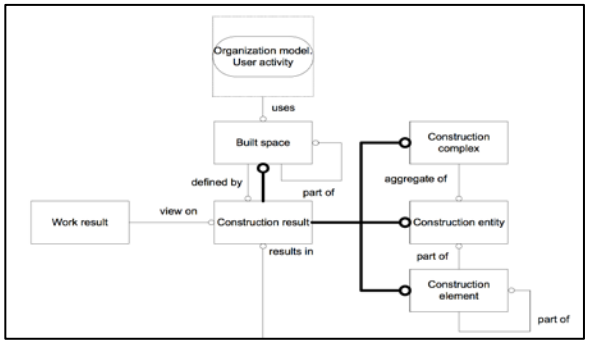
ISO 12006-2 Illustrations

Change of title – adding Identification

The user perspective: Identification and part-of relations turned out to be an important issue when using type-of classification in project specific situations



ISO 12006-2 Illustrations



Part-of relations already existed and were refined in the conceptual model of ISO 12006-2

The What and the Which

Classify objects unambiguously (*What object*) in order to

- Sort and group objects by type (having the same characteristics)
- Seek and find specific object types
- Defining (generic) sets of properties for the objects (object libraries)

Identify objects specifically (*Which project specific object*) in order to

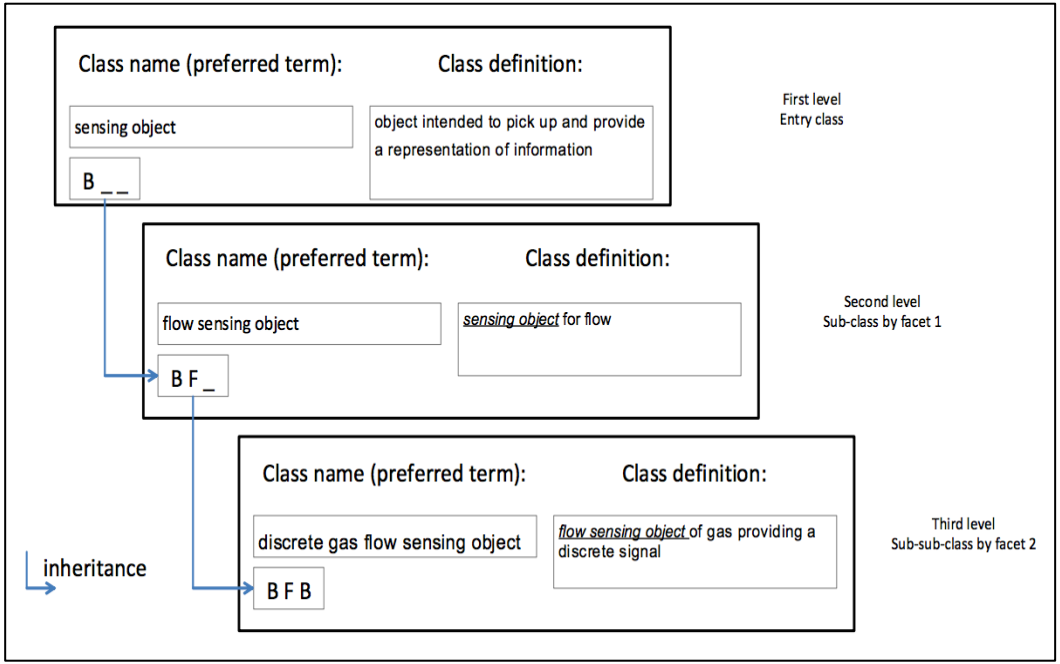
- Trace and identify the specific instance/occurrence of the object
- Distinguish, separate and handle them individually being able to reference them unambiguously
- Group objects according to a systems point of view (assembling in constructions/systems as part-of)
- Communicate the context of the object (part-of or location)
- Secure unambiguous exchange of data

Language, terminology and definitions

- ISO 704:2009,
- ISO 1087-1:2000,
- ISO 22274:2013 and
- ISO/IEC 81346-1-2:2016

together add important principles to the framework of ISO 12006-2:2015 for use of classification in construction.

These standards could also benefit the work with bSDD.



Applying classification in BIM

Examples of issues to deal with and problems to be solved

- **Geometry and modelling** (the linking to non-geometrical information, the problems of layered objects compares to specified objects)
- **Structural, thermal and other simulations** (including of objects, composition of objects)
- **Specification** (linking to geometrical model and to structured tendering list, specification of objects with property data, identifying interfaces)
- **Cost estimation, quantity take off and tendering** (the integration of information from several tools, doing 5D, automatic quantification, measurement standards
- **Manufacturer information** (searching for products, sorting by properties)
- **Timeline and programming** (identifying and numbering elements for production)
- **Mapping classifications and buildingSMART Data Dictionary** (bSDD)

Thank you for your attention!

Questions?